



Mobility and Economy Dashboard

Promoting Maryland SHA's Performance-Based Approach
to Safety and Mobility Improvements



Agenda

- Project Overview
 - Vision
 - Key Messages
- Application Features
- Demonstration
- System Architecture and Technologies
- Challenges
- Way Ahead
- Questions

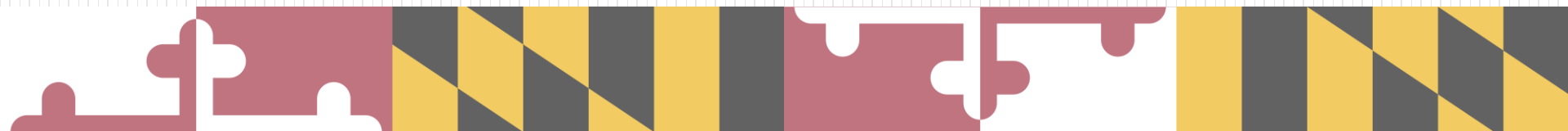


Performance Based Planning



- Vision: Provide a world class highway system
- SHA Business Plan – Key Performance Areas:
 - Highway Safety
 - Mobility & Economy
 - System Preservation and Maintenance
 - Management of the Agency
 - Environmental Compliance and Stewardship
 - Customer Communications, Service and Satisfaction

Mobility & Economy Goal: Support Maryland's economy and communities through enabling reliable movement of people and goods



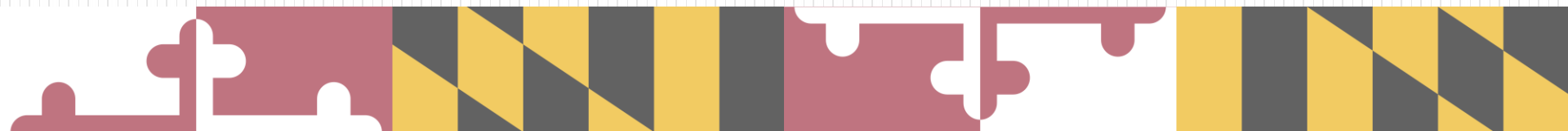
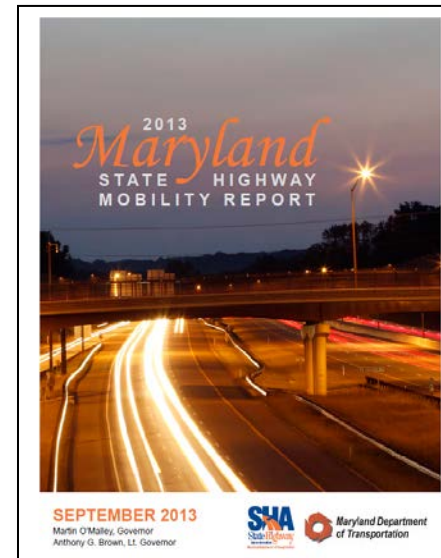
Data Driven Approach

■ Published reports

■ Annual Mobility Report

- http://www.roads.maryland.gov/OPPEN/2013_Maryland_Mobility.pdf
- Inaugural report published in 2012
- Document traffic operations
- Benchmark traffic operations
- Metrics derived from INRIX Data
- Freeways and expressways only
- Arterials to be added in 2014 report

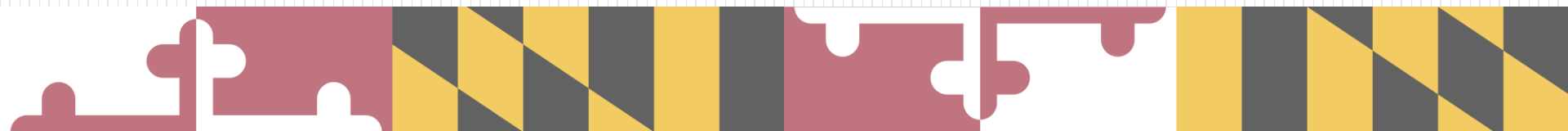
■ Performance Dashboards



Dashboard Goals



- Increase transparency
- Increase accountability
- Showcase SHA's performance-based approach
 - Monitor system from year to year using performance measures
 - More efficient investments
- Provide an integrated web-based solution
 - Report annual key mobility performance indicators
 - Report mitigation strategies
 - Interactive charts, maps, and corridor-level impact analysis



Key Messages

■ What is Happening? (Trends)

■ Congestion

- Measured using **Travel Time Index (TTI)**
- Recurring congestion only

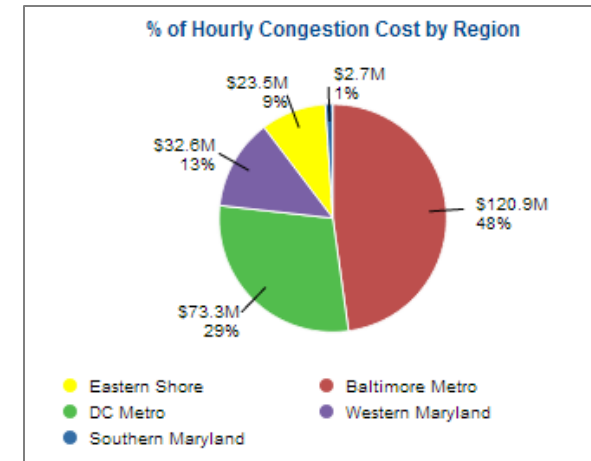
■ Reliability

- Measured using **Planning Time Index (PTI)**
- Variability of travel time

■ Traffic Volume

- Measured using **Average Vehicle Miles Traveled (AVMT)**
- Number of vehicles times the distance they're traversing the network

■ Release 1 – Freeways & Expressways only



Key Messages

■ What is SHA doing about it? (Mitigation)

■ Projects

- Major and Minor Projects

■ Programs

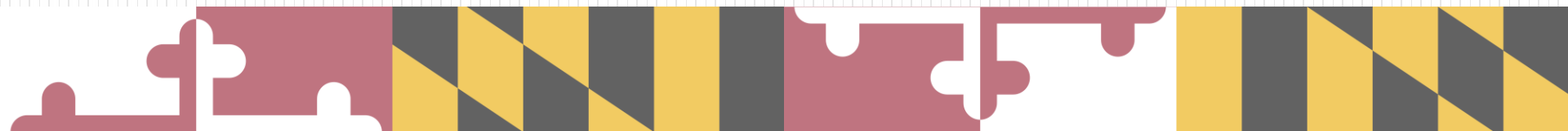
- Signal retiming
- CHART/Incident Management
- ITS/511

■ Policies

- Park N Ride
- HOV Users
- Reversible Lanes
- Bicycle

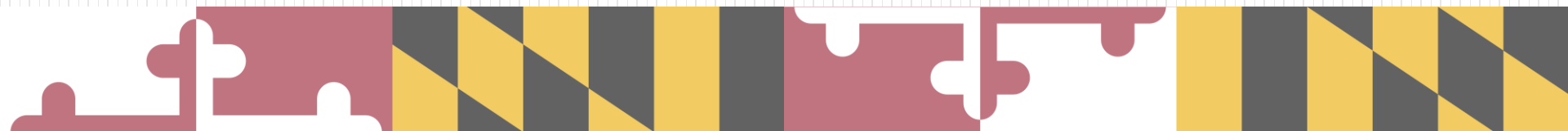


- Pedestrian
- Transit Oriented Development
- MDTA Toll Lanes



Key Messages

- What was the outcome? (Results)
 - Demonstrate the user cost savings from implemented initiatives
- How things have changed over time (Past Trends)
 - Year to year comparisons
 - Is the highway system performance improving?
 - Is there an increase in travel demand?



Application Features

- Review performance metrics
 - View data by year and by time of day
 - View aggregated and disaggregated data
- Mapping
 - Quickly identify problem areas
 - Animate over 24 hour period
 - Overlay mitigation strategies with hotspots
- Perform different types of geographic analyses
 - By Jurisdiction, Corridor or Hotspot
- Read Metadata for charts



Demonstration



Mobility and Economy Dashboard

Welcome to the Mobility and Economy Dashboard for the State of Maryland!

The Maryland State Highway Administration's (SHA) mobility related efforts are highlighted in this dashboard based on data from the Maryland State Highway Mobility Report. Mobility is a key performance area (KPA) at SHA which aims to "Support Maryland Economy and Communities with Reliable Movement of People and Goods". This dashboard aims to identify successes, challenges, and strategies being utilized to improve the transportation services SHA delivers to Marylanders and the traveling public. This effort aims to drive investment related decisions and make the best use of transportation revenues using data driven performance based approaches.

I would like to explore:

Congestion ▾

What is happening? ▾

Where?

Jurisdiction ▾

View ▶

Disclaimer: SHA makes no claims, promises or guarantees about the accuracy, completeness, or adequacy of the contents within this dashboard and expressly disclaims liability for any errors and omissions in the contents of this dashboard.

What are the Mobility Trends in Maryland?

Maryland's highway system handles over 56 Billion vehicle miles of travel on an annual basis. SHA has developed comprehensive performance measurement systems. In 2012:



View What's Happening ▶

What is SHA doing to address Mobility Challenges?

SHA implements various projects, programs and policies to enhance mobility on its facilities. Our approach includes:



Chart System



Capital Improvements



Signal Systems



Mode Choices

View What SHA is Doing ▶

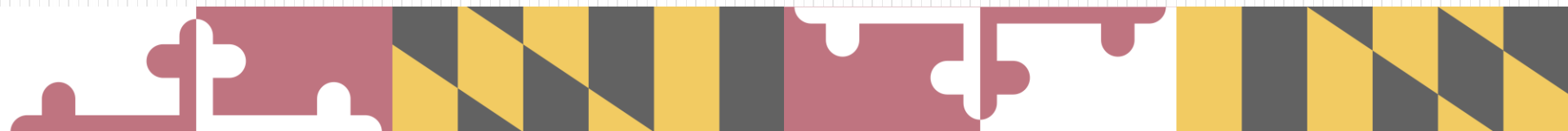
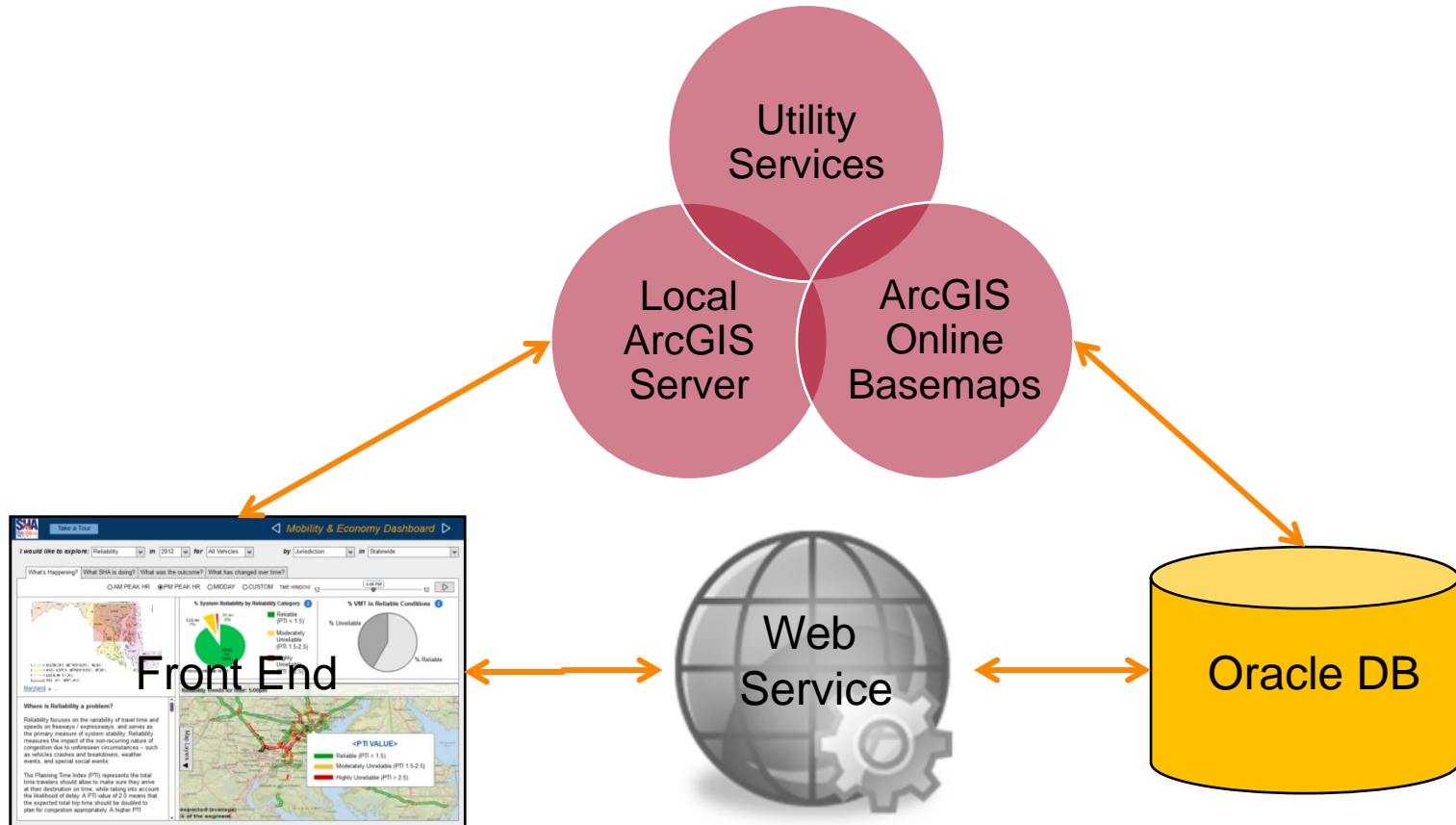
What is the outcome of SHA's Mobility Initiatives?

The mobility solutions implemented by SHA projects, programs and policies result in user cost savings for automobile and truck travel. In 2012, annual user savings included:



View The Outcomes ▶

System Architecture



Technologies Used

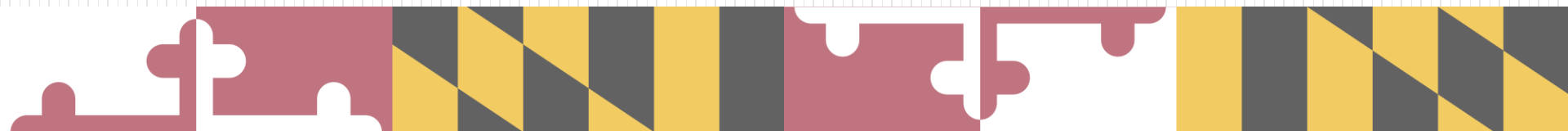


■ Back End

- Oracle
- Java
- .NET Web API

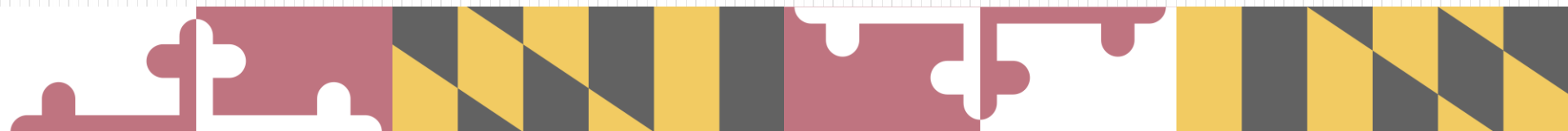
■ Front End

- Ember MVC JavaScript framework
- HTML 5
- JavaScript libraries (Ember MVC and jQuery)
- Esri ArcGIS Server API for JavaScript
- D3 - JavaScript rendering library for charting
- SCSS



Challenges

- TMC vs SHA's Linear Referencing System
 - INRIX Data
 - SHA volume data
- Data Availability
 - Dashboard requires data by year and often by hour
 - Data Owners/Stakeholder buy-in
 - Arterials and Freight data not yet available
- ArcGIS Server 10.2 upgrade



Way Ahead

- **Mobility & Economy Dashboard**
 - Deployed in SHA's test environment on 4/24
 - Release to public Fall 2014 with Mobility Report
 - Incorporate arterial and freight data
 - Enhance corridor analysis
- **Asset Management Dashboard**
 - Requirements gathering – ongoing
 - Development and testing
- **Map 21 Dashboard**
- **Safety Dashboard**

Questions?



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